CLAIMS

1. Integrated optics artificial cladding grating characterised in that it comprises in a substrate an optical guide core (2, 21 ,22 ,23, 24, 25), an optical cladding (3, 31, 32, 33, 34, 35) independent of the core and surrounding at least a portion of the core in a zone of the substrate called the zone of interaction (I1, I2, I3, I4, I5) comprising a grating (19, 41, 42, 43, 44, 46) capable of coupling at least one guided mode of the core to at least one cladding mode or vice versa, the said zone of interaction comprising a coupling variation along the direction of propagation of the modes, with the refractive index of the cladding being different from the refractive index of the substrate and lower than the refractive index of the core at least in the part of the cladding next to the core in the interaction zone.

2. Integrated optics artificial cladding grating of claim 1, characterised in that the coupling variation along the direction of propagation of the modes may use variation of the coupling force and/or the coupling wavelength.

3. Integrated optics artificial cladding grating of claim 1 or 2, characterised in that the coupling variation is obtained by modulation of the section of the cladding in the interaction zone.

4. Integrated optics artificial cladding grating according to any of claims 1 to 3, characterised in that the coupling variation is obtained by modulation of the centring of the core with respect to the section of the cladding.

5. Integrated optics artificial cladding grating of claim 3 or 4, characterised in that the modulation of the section of the cladding and/or the modulation of the centring of the core with respect to the section of the cladding is a uniform variation.

6. Integrated optics artificial cladding grating of claim 3 or 4, characterised in that the modulation of the section of the cladding and/or the modulation of the centring of the core with respect to the section of the cladding is a variation by levels.

7. Fabrication method of an artificial cladding grating according of any of the previous claims, characterised in that the cladding, the guide core and the grating are respectively made by modification of the refractive index of the substrate so that at least in the part of the cladding next to the core and at least in the interaction zone, the refractive index of the cladding is different from the refractive index of the substrate and lower than the refractive index of the core and so that the zone of interaction has a coupling variation along the direction of propagation of the modes.

8. Fabrication method of claim 7, characterised in that the modification of the refractive index of the substrate is obtained by radiation and/or by introduction of ionic species.

9. Fabrication method of claim 7 or 8, characterised in that it comprises the following steps:

- a) introduction of a first ionic species in the substrate so as to permit the optical cladding to be obtained after step c),
- b) introduction of a second ionic species in the substrate so as to permit the guide core to be obtained after step c),
- c) burying of the ions introduced in steps a) and b) so as to obtain the cladding and the guide core,
- d) formation of the grating.

10. Fabrication method of claim 9, characterised in that the first and/or second ionic species is introduced by means of an ionic exchange or by ionic implantation.

11. Fabrication method of claim 9 or 10, characterised in that the substrate is made of glass and contains Na^+ ions, and the first and the second ionic species are Ag^+ and/or K^+ ions.

12. Fabrication method of any of the claims 9 to 11, characterised in that step a) comprises the creation of a first mask (61) comprising a pattern capable of making the cladding, the first ionic species

being introduced via this first mask and step b) comprises the elimination of the first mask and the creation of a second mask (65) comprising a pattern capable of the making the core, the second ionic species being introduced via this second mask.

13. Fabrication method of any of claims 9 to 12, characterised in that the grating is obtained by the introduction of ionic species via a mask permitting the core and/or the cladding to be obtained, or obtained by a specific mask.

14. Fabrication method of any of claims 9 to 13, characterised in that the grating is obtained by local heating.

15. Fabrication method of any of claims 9 to 14 characterised in that the grating is obtained by etching of the substrate next to the interaction zone.

16. Fabrication method of any of claims 9 to 15, characterised in that at least part of the burying is carried out the application of an electrical field.

17. Fabrication method of any of claims 9 to 16, characterised in that at least part of the burying is carried out by re-diffusion in an ionic bath.

18. Fabrication method of any of claims 9 to 17, characterised in that all or part of the burying is

carried out by a depositing at least one layer (68) on the surface of the substrate.

19. Fabrication method of any of claims 9 to 18, characterised in that the first ionic species and/or the second ionic species are introduced with the application of an electrical field.